

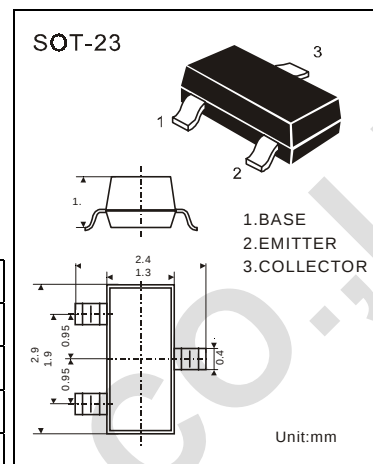
### NPN EPITAXIAL SILICON TRANSISTOR

#### AM/FM IF AMPLIFIER, LOCAL OSCILLATOR OF FM/VHF TUNER

\* High Current Gain Bandwidth Product  $f_T=1100\text{MHz}$

#### ABSOLUTE MAXIMUM RATINGS at $T_a=25^\circ\text{C}$

| Characteristic                                 | Symbol    | Rating  | Unit             |
|------------------------------------------------|-----------|---------|------------------|
| Collector-Base Voltage                         | $V_{cb0}$ | 40      | V                |
| Collector-Emitter Voltage                      | $V_{ce0}$ | 30      | V                |
| Emitter-Base Voltage                           | $V_{eb0}$ | 4.0     | V                |
| Collector Current                              | $I_c$     | 20      | mA               |
| Collector Dissipation $T_a=25^\circ\text{C}^*$ | $P_D$     | 100     | mW               |
| Junction Temperature                           | $T_j$     | 150     | $^\circ\text{C}$ |
| Storage Temperature                            | $T_{stg}$ | -55-150 | $^\circ\text{C}$ |



#### ELECTRICAL CHARACTERISTICS at $T_a=25^\circ\text{C}$

| Characteristic                       | Symbol        | Min | Typ | Max  | Unit | Test Conditions                             |
|--------------------------------------|---------------|-----|-----|------|------|---------------------------------------------|
| Collector-Base Breakdown Voltage     | $V_{cb0}$     | 40  |     |      | V    | $I_c=100\mu\text{A}$ $I_e=0$                |
| Collector-Emitter Breakdown Voltage# | $V_{ce0}$     | 30  |     |      | V    | $I_c=1\text{mA}$ $I_b=0$                    |
| Emitter-Base Breakdown Voltage       | $V_{eb0}$     | 4.0 |     |      | V    | $I_e=100\mu\text{A}$ $I_c=0$                |
| Collector-Base Cutoff Current        | $I_{cb0}$     |     |     | 500  | nA   | $V_{cb}=18\text{V}$ $I_e=0$                 |
| Emitter-Base Cutoff Current          | $I_{eb0}$     |     |     | 500  | nA   | $V_{eb}=4\text{V}$ $I_c=0$                  |
| DC Current Gain                      | $H_{fe}$      | 40  |     | 200  |      | $V_{ce}=6\text{V}$ $I_c=1\text{mA}$         |
| Collector-Emitter Saturation Voltage | $V_{ce(sat)}$ |     |     | 0.40 | V    | $I_c=10\text{mA}$ $I_b=1\text{mA}$          |
| Collector-Base Capacitance           | $C_{ob}$      |     | 1.3 | 1.7  | PF   | $V_{cb}=10\text{V}$ $I_e=0$ $f=1\text{MHz}$ |
| Current Gain-Bandwidth Product       | $f_T$         |     | 550 |      | MHz  | $V_{ce}=6\text{V}$ $I_c=1\text{mA}$         |

\* Total Device Dissipation :  $FR=1 \times 0.75 \times 0.062\text{in Board}$ , Derate  $25^\circ\text{C}$ .

# Pulse Test : Pulse Width  $\leq 300\mu\text{s}$ , Duty cycle  $\leq 2\%$